

ABSTRACT

The present invention provides a robust FBAR device and a simplified method of fabricating a FBAR device. FBAR device according to the present invention includes a membrane supporting layer between a substrate and a membrane layer, surrounding an air gap region. The membrane supporting layer supports the membrane layer to obtain a robust structure. Firstly, the method forms a sacrificial layer on the substrate, then a photoresist pattern is formed on air gap forming region at a top surface of the sacrificial layer, the method removes the sacrificial layer to form a sacrificial pattern by using the photoresist pattern as an etching mask. An insulating material then deposits on the substrate, the photoresist pattern is remove, and a membrane layer is formed on a top surface of the sacrificial layer and the insulating material layer. Finally, the method removes the sacrificial pattern to form an air gap.